

New or Little-Known Crane Flies from Iran. I (Diptera: Tipulidae)¹

CHARLES P. ALEXANDER

AMHERST, MASSACHUSETTS 01002

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Abstract: A short series of papers covering the crane flies of Iran, based on materials collected by Dr. Fernand Schmid in 1955 and 1956, is begun with Part I discussing certain species of the tribe Pediciini. The new species are *Pedicia (Tricyphona) persica*, *P. (T.) iranensis*, *P. (T.) elburzensis*, and *P. (T.) acuspica*, from the Elburz Mountains in northern Iran, and *P. (T.) luteicolor* from Yugoslavia, included here for completeness.

During 1955 and 1956 the distinguished entomologist, Dr. Fernand Schmid, of Ottawa, collected extensively in northern Iran, his materials including numerous Tipulidae that were acquired by the writer. Several undescribed species were represented as well as a surprisingly large number of described species that presently are known only from Europe. Most of the Schmid materials were from various stations in the Elburz Mountains, in the Province of Mazandéran, along the south shore of the Caspian Sea, taken at altitudes between 1700 and 2300 meters. In this initial paper I am describing five new species in the genus *Pedicia* and expect to discuss further materials in later papers under this general title. One species from this series was described earlier as *Erioptera (Psilonopa) iranica* Alexander (Journal N. Y. Ent. Soc., 81: 83-84; 1973). I wish to extend my sincere thanks to Dr. Schmid for his interest in collecting these flies throughout the Himalayas and adjoining regions to the west. All materials in this series of papers are preserved in the Alexander Collection.

Pedicia (Tricyphona) persica, n. sp.

Size medium (wing about 13 mm); general coloration of thorax yellow, very restrictedly patterned with darker; legs yellow; wings yellow, restrictedly patterned with brown, venation of outer radial field very variable; male hypopygium with dististyle very large, placed at apex of basistyle, outer surface with abundant erect black spinoid setae.

Male. Length about 13-14 mm; wing 12-13 mm; antenna about 1.8 mm.

Female. Length about 14-17 mm; wing 13-15 mm.

Rostrum yellow; palpi with basal segment yellow, remainder medium brown. Antennae yellow throughout; flagellar segments short and crowded, outer ones shorter than their verticils. Head pale gray, yellowed behind; anterior vertex broad, more than three times the diameter of scape.

Prothorax yellow. Mesonotum yellow, centers of scutal lobes pale brown. Pleura uniformly yellow. Halteres very pale yellow. Legs with coxae and trochanters clear light yellow; remainder of legs slightly darker yellow, outer tarsal segments pale brown.

¹Contribution from the Entomological Laboratory, University of Massachusetts.

Wings (Figs. 1-3) yellow, costal border slightly darker yellow, stigmal region, cell *Sc* and base of cell *C* very faintly darkened; narrow brown seams at origin and fork of *Rs* and adjoining veins, with less evident darkenings at *R*₂ and *m*. Venation: Radial field very variable, as discussed later; *r-m* before fork of *Rs* in all available material; in holotype (Fig. 1) forking into a long *R*₂₊₃ and a short *R*₄₊₅; in allotype (Fig. 3) vein *R*₂₊₃₊₄ preserved as a short suberect element, with *R*₁ on the upper fork; in paratype (Fig. 2) veins *R*₂₊₃, *R*₄ and *R*₅ all at fork of *Rs*; in holotype cell *M*₁ short, subequal to its petiole, in other specimens cell *M*₁ deep, its petiole subequal to or slightly shorter than *m*. Variation in this relatively small series is shown; a second paratype not figured has the fork of *Rs* shortly beyond *r-m* and with two and three adventitious crossveins in cell *R*₁.

Abdominal tergites with proximal segments brown medially, yellow laterally, in holotype more uniformly yellow; sternites clear light yellow; hypopygium darkened. Male hypopygium (Fig. 7) with tergite, *t*, broadly transverse, posterior border slightly produced. Basistyle, *b*, with interbase, *i*, a flattened pale blade with sparse setae. Dististyle, *d*, very large, flattened, placed at apex of basistyle; outer angle with two short spines, apical margin with abundant erect black spinoid setae, those of the inner group shorter and more abundant.

Holotype. ♂, Haradan, Iran, September 11, 1956 (Schmid). *Allotype*: ♀, Zanuz, Iran, Elburz Mts., 2,000 meters, September 21, 1955 (Schmid). *Paratypes*, one ♂, one ♀, pinned with allotype.

In its hypopygial structure the present fly is generally similar to *Pedicia* (*Tricyphona*) *riedeli* (Lackschewitz), *P. (T.) straminea* (Meigen) and some other European species, differing most evidently in details of this structure, especially the very large dististyle. Edwards (1938) referred these species to the subgenus *Crunobia* Kolenati but I prefer to retain them in *Tricyphona*. The venation of the radial field of the wing is very variable as shown by the few figures here provided. Such conditions of variation in the subgenus are not rare and have been discussed and figured by several students, such as the Nearctic *P. (T.) inconstans* (Osten Sacken) by Johnson (*Psyche*, 34: 216-217, figs.; 1927) and the European *P. (T.) claripennis* (Verrall) and *P. (T.) immaculata* (Meigen) by Edwards (*Trans. Soc. British Ent.*, 5: 56-57; 1938).

Pedicia (*Tricyphona*) **iranensis**, n. sp.

General coloration of head and thorax gray, praescutum with four polished black stripes; halteres obscure yellow; legs with bases of femora yellow, passing into brownish yellow; wings pale brown, stigma slightly darker, prearcular field more yellowed; abdomen dark brown; male hypopygium with arms of tergal lobes slender, subapical in position.

Male. Length about 10 mm; wing 10 mm; antenna about 1.6 mm.

Rostrum and palpi black. Antennae of male 17-segmented, black; flagellar segments subcylindrical, proximal ones longer than their verticils; terminal segment one-half longer

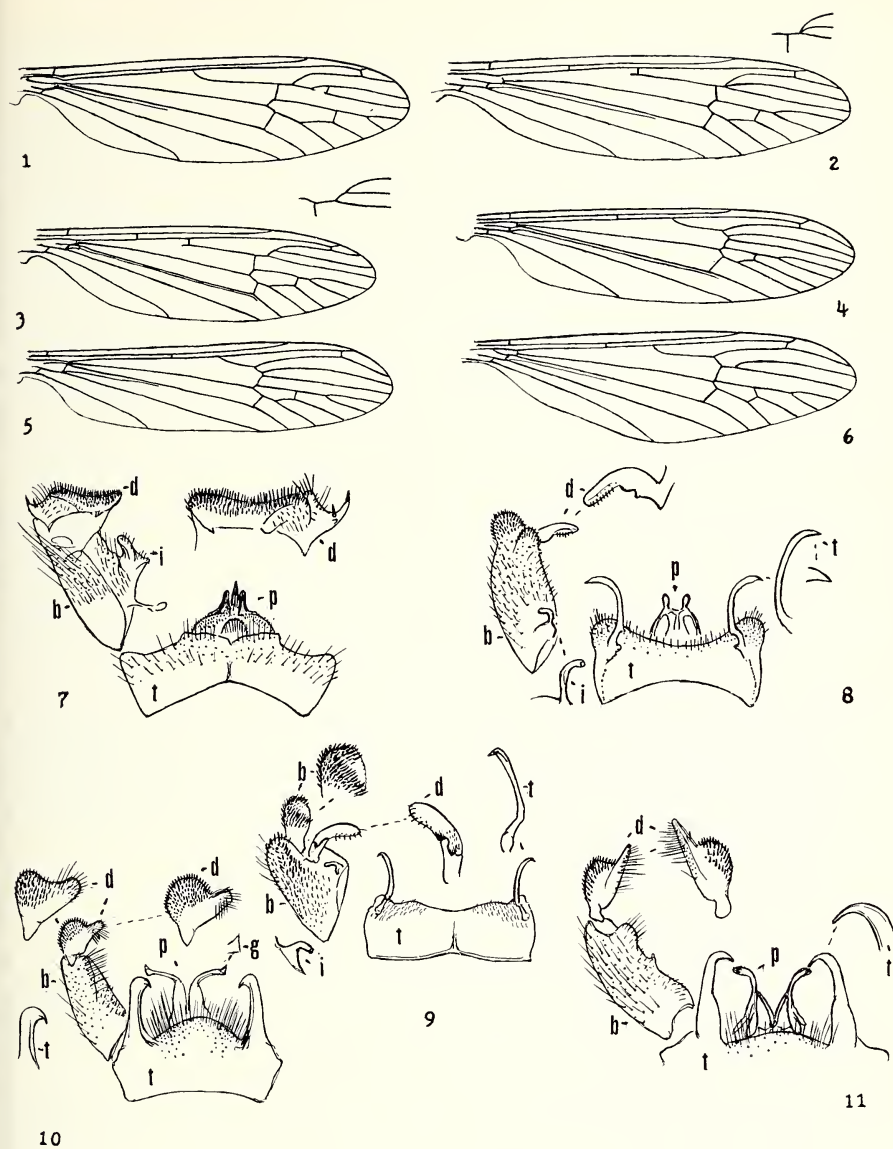
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(Symbols: Male hypopygium—*b*, basistyle; *d*, dististyle; *g*, gonapophysis; *i*, interbase; *p*, phallosome; *t*, 9th tergite.)

FIG. 1. *Pedicia* (*Tricyphona*) *persica*, n. sp.; venation, holotype.

FIG. 2. The same; venation, paratype, showing variation.

FIG. 3. The same; venation, allotype.

FIG. 4. *Pedicia* (*Tricyphona*) *iranensis*, n. sp.; venation.FIG. 5. *Pedicia* (*Tricyphona*) *luteicolor*, n. sp.; venation.FIG. 6. *Pedicia* (*Tricyphona*) *acuspica*, n. sp.; venation.FIG. 7. *Pedicia* (*Tricyphona*) *persica*, n. sp.; male hypopygium.FIG. 8. *Pedicia* (*Tricyphona*) *iranensis*, n. sp.; male hypopygium.FIG. 9. *Pedicia* (*Tricyphona*) *luteicolor*, n. sp.; male hypopygium.FIG. 10. *Pedicia* (*Tricyphona*) *elburzensis*, n. sp.; male hypopygium.FIG. 11. *Pedicia* (*Tricyphona*) *acuspica*, n. sp.; male hypopygium.

than the penultimate. Head gray, posterior vertex behind with a central darkening (perhaps artificially produced).

Pronotum gray. Mesonotal praescutum gray with four polished black stripes, intermediate pair nearly contiguous, ending some distance before suture; scutum gray, centers of lobes vaguely paler; scutellum and postnotum light gray, parascutella obscure yellow, deeply excavated. Pleura gray, dorsopleural membrane obscure yellow. Halteres yellow. Legs with coxae and trochanters yellow, fore coxae slightly more darkened basally; femora yellow basally, outwardly brownish yellow; tibiae light brown, darker distally; tarsi black; claws slender, yellow. Wings (Fig. 4) pale brown, stigma slightly darker, prearcular field more yellowed; veins dark brown. Longitudinal veins from slightly beyond the arculus with trichia. Venation: Branches of R_s consisting of the long R_{2+3} and very short R_{4+5} , R_1 and R_5 subequal in length; cell 1st M_2 small; $m-cu$ at near one-third M_{3+4} .

Abdomen dark brown. Male hypopygium (Fig. 8) with arms of the tergal lobes, t , basal in position, the lobes extended beyond their insertion. Basistyle, b , with the interbase a very small curved club, its outer end slightly dilated.

Holotype. ♂, Javardi, Iran, October 7, 1956 (Schmid).

The most nearly related regional species include *Pedicia (Tricyphona) sakkyia* Alexander, of Sikkim and Assam, and three European species, *P. (T.) claripennis* (Verrall), *P. (T.) lucidipennis* Edwards, and the Corsican, *P. (T.) trifurcata* (Edwards, 1928), all differing in details of coloration and in hypopygial structure, especially the tergite and interbase. *P. (T.) luteicolor*, n. sp., is similar in venation and in the general structure of the hypopygium, differing evidently in the yellow body coloration.

Pedicia (Tricyphona) luteicolor, n. sp.

Generally similar to *lucidipennis*, differing in the light yellow thoracic coloration and hypopygial structure; legs yellow, tarsi darker; wings entirely light yellow, veins darker yellow; male hypopygium with tergal arms slender; basistyle with two terminal lobes, both with conspicuous black setae; dististyle a flattened yellow blade, the relatively few setae restricted to the lower margin.

Male. Length about 8 mm; wing 9.5 mm; antenna about 1.4 mm.

Female. Length about 9 mm; wing 9 mm.

Rostrum yellow; palpi dark brown. Antennae 16-segmented; scape and pedicel yellow, flagellum black; flagellar segments oval, gradually decreasing in size outwardly, terminal segment larger than the penultimate. Anterior vertex yellowish gray, posterior vertex light gray.

Thoracic dorsum light yellow, praescutum with four scarcely differentiated more orange stripes; pleura clear light yellow. Halteres yellow, knob very slightly more darkened apically. Legs with coxae and trochanters light yellow; femora darker yellow; tibiae and tarsi brown, the latter darker. Wings (Fig. 5) entirely light yellow, veins darker yellow. Venation: R_s about as long as cell 1st M_2 ; $r-m$ connecting with R_5 shortly before its base; cell 1st M_2 closed; cell M_1 about one-third longer than its petiole; $m-cu$ shortly before midlength of M_{3+4} .

Abdomen yellow. Male hypopygium (Fig. 9) with tergite, t , transverse, outer lateral angles not produced, tergal arms long and slender. Basistyle, b , with two terminal lobes, both with conspicuous blackened setae, those of the longer ventral lobe more abundant, arranged in a double row; interbase, i , a small curved rod, as in subfigure. Dististyle, d , a conspicuous flattened yellow blade, with very sparse small setae on the lower margin.

Holotype. ♂, Cipari, Yugoslavia, 1,400 meters, August 11, 1955 (Schmid). *Allotype*, ♀, pinned with type.

The species is most nearly allied to certain other European species including besides *Pedicia (Tricyphona) lucidipennis* Edwards, also *P. (T.) claripennis* (Verrall) and *P. (T.) trifurcata* (Edwards), all of which have the thoracic coloration dark brown or gray, with conspicuous brown or blackened stripes and all species differ among themselves in hypopygial details.

Pedicia (Tricyphona) elburzensis, n. sp.

Size medium (wing 7.5–9 mm); general coloration of thorax orange yellow, abdominal tergites yellowish brown, subterminal segments slightly darker; wings broad, nearly hyaline, cell *1st M*₂ closed, cell *M*₁ subequal to its petiole; male hypopygium with median region of tergal border produced, with very long pale setae, lateral arms erect, inner angle of apex produced into a slender acute spine; dististyle with rostrum broad, with conspicuous setae, apex obtuse; gonapophyses with apices slightly extended into hyaline subtriangular blades.

Male. Length about 6.5–7 mm; wing 7.5–9 mm; antenna about 1–1.2 mm.

Female. Length about 7–8 mm; wing 8–9 mm.

Rostrum light brown; palpi black. Antennae 15-segmented; scape and pedicel dark brown, flagellum yellowed; proximal flagellar segments short and crowded, transverse, outer segments more elongate. Head dark brown, heavily gray pruinose.

Thoracic dorsum orange yellow, including three vaguely indicated praescutal stripes and the scutal lobes; pleura clear yellow. Halteres light yellow. Legs with coxae and trochanters yellow; remainder of legs light yellow, tips of femora and tibiae and the outer tarsal segments light brown, claws long, appressed. Wings broadest opposite end of vein *2nd A*; nearly hyaline, prearcular and costal fields of light yellow, no evident stigma; veins light brown. Longitudinal veins of about the outer four-fifths of wing with abundant short trichia. Venation: *R*₄₊₅ relatively short, forking about opposite midlength of cell *1st M*₂; cell *M*₁ subequal to its petiole; *m-cu* at or shortly beyond the fork of *M*, in cases about to one-fifth *M*₃₊₄.

Abdominal tergites yellowish brown, subterminal two segments slightly darker, sternites and hypopygium clearer yellow. Male hypopygium (Fig. 10) with posterior border of tergite, *t*, conspicuously produced medially, provided with very long pale setae; lateral arms erect, very slightly enlarged at apex, the apical inner angle produced into a slender acute spine. Dististyle, *d*, with base moderately enlarged, with relatively short setae; rostrum broad, apex obtuse, surface with long conspicuous setae. Gonapophysis, *g*, with outer half more slender, apex slightly expanded into a hyaline subtriangular blade.

Holotype. ♂, Quattekas, Elburz Mts., Iran, 1,800 meters, September 19, 1955 (Schmid).

Allotype: ♀, Zanus, 2,000 meters, September 21, 1955, pinned with one paratype. *Paratypes*: 3 ♂♂, with the allotype; ♂, Barajan, 2,000 meters, September 15, 1955 (Schmid).

The present fly is most nearly related to *Pedicia (Tricyphona) acuspica*, n. sp., which differs chiefly in hypopygial characters, including the tergal arms, dististyle, and apex of the gonapophysis. As has been indicated by Savtshenko (in Mendl, Bull. Soc. Ent. Suisse, 46: 292; 1973) in Transcaucasia and also in Iran there are various generally similar species or races in this genus that are closely interrelated and whose exact relationships remain uncertain.

Pedicia (Tricyphona) acuspica, n. sp.

Size medium (wing about 9 mm); general coloration of thorax orange yellow, head and abdomen brown; halteres yellow; legs yellow; wings almost uniformly subhyaline, costal border light yellow, stigma lacking; vein R_{4+5} relatively short with $r-m$ at near midlength, cell $1st\ M_2$ closed; male hypopygium with beak slender, its lower margin with very long pale setae, each lateral tergal arm gradually narrowed into a curved acute point.

Male. Length about 9 mm; wing 9 mm; antenna about 1.3 mm.

Rostrum and palpi brown. Antennae 15-segmented; dark brown; proximal four or five flagellar segments short and crowded, outer segments more elongate with verticils that are subequal to the segments, the terminal one-third longer than the penultimate segment. Head dark brown.

Thorax almost uniformly orange yellow with a poorly indicated slightly darker central stripe, scutal lobes similarly patterned. Halteres yellow. Legs with coxae and trochanters orange yellow; remainder of legs yellow, outer tarsal segments very slightly darker; claws needlelike. Wings (Fig. 6) almost uniformly subhyaline, costal border light yellow, stigma not indicated; veins pale brown, yellow in the costal field. Longitudinal veins of outer three-fourths of wing with small inconspicuous trichia. Venation: R_{4+5} relatively short, with $r-m$ at near midlength; cell $1st\ M_2$ closed; cell M_1 subequal in length to its petiole; vein Cu_2 very faint to scarcely evident, ending about opposite one-third Cu_1 .

Abdomen light brown, hypopygium slightly more yellowed. Male hypopygium (Fig. 11) with dististyle, d , relatively small, body suboval, dorsal half relatively low, with abundant blackened spinose setae; rostrum slender, its lower margin with a row of very long pale setae. Ninth tergite, t , with lateral arms distinctive, appearing as erect rods that narrow gradually into an acute curved point, median region of posterior border low convex. Phallosome, p , including a pair of slender apophyses, their apical third outcurved and slightly enlarged, roughened.

Holotype. ♂, Mughan, Iran, June 20, 1956 (Schmid).

The present fly is generally similar to the smaller *Pedicia (Tricyphona) zwicki* Mendl (Mitteil. Schweiz. Ent. Gesell., 46: 291-293, figs. 1-3, 1973), described from the Akiyama Pass, Turkey, and from *P. (T.) elburzensis*, n. sp. All three species are yellow flies having cell $1st\ M_2$ of the wings present, differing from one another in relative size, details of venation, and in the male hypopygium, especially the dististyle and lateral tergal arms. *P. (T.) livida* (Madarassy) likewise agrees in its general yellow coloration, differing in the open cell M_2 of the wings and in hypopygial characters.